

Water Quality Report 2021 | Town of Leesburg

This water quality report contains important information about your drinking water. Please translate for others. If you are a landlord, please share with your tenants.

For the 18th consecutive year,
Leesburg has received the

**"Excellence in
Waterworks
Performance
Award"**

from the
Virginia Department of Health



TOWN OF LEESBURG

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Russell Chambers,

*Utility Plant Manager, Water
Supply Division*

March 2022

I am pleased to present Leesburg's 2021 Annual Water Quality Report.

I am very proud of the dedication of our Water Supply Division employees to providing you, our customers, with safe, clean, and reliable drinking water. They take their roles in providing this essential service very seriously – and it shows!

In 2021, for the 18th consecutive year, Leesburg received the Excellence in Waterworks, Operations/Performance Award from the Virginia Department of Health. This award focuses on excellence in overall plant performance and filtration operations by recognizing organizations that set and achieve goals well beyond the established regulations.

Despite the challenges of the pandemic these past two years, our employees continued to ensure that every quality standard established by the Federal Safe Drinking Water Act was met or exceeded. This report is designed to inform you about the quality water we deliver to you every day.

In order to ensure safe drinking water for our customers, Leesburg performs extensive water quality monitoring and testing. In all, we test for over 120 constituents. You'll find a summary of the testing and monitoring results in the "Substances Detected in Your Drinking Water" table on page 8 of this report. This report also contains information about:

- The sources and treatment of Leesburg's drinking water
- Drinking water regulations and general water information
- How to take part in Leesburg's decision-making process

We hope you will take time to read this important report, and we encourage you to participate in decisions involving your drinking water. To obtain more information regarding any topic in this report, or if you have any questions, comments, or suggestions on how we can make next year's report more useful, please call our Department of Utilities at (703) 771-2750.

Sincerely,

Kelly Burk
Mayor, Town of Leesburg

About Your Drinking Water

The U.S. Environmental Protection Agency (EPA) is authorized by Congress to enforce the Safe Drinking Water Act Amendments of 1996 in regulating water systems for public health and protection and establishing water standards. The 1996 Amendments require all water suppliers to issue a water quality report, called a Consumer Confidence Report (CCR), to consumers on an annual basis. The Virginia Department of Health (VDH) has the responsibility for enforcing the Federal Water Quality Standards in the Commonwealth.

The Town of Leesburg is proud to report that the drinking water produced by the Department of Utilities was well within all federal and state standards for drinking water during 2021.

How is Your Water Treated?

The Town of Leesburg owns and operates the Kenneth B. Rollins Water Filtration Plant (WFP), which withdraws water from the Potomac River. The water treatment plant utilizes advanced technologies to remove undesirable substances from the water and make it safe to drink. The water is treated with a coagulant that aids in the removal of particles and fine debris. The water is then passed through multi-media filters to remove remaining microscopic particles. A disinfectant is added to destroy harmful bacteria and viruses. Fluoride is added at the Centers for Disease Control (CDC) recommended levels to protect teeth and a corrosion inhibitor is added to minimize the potential for lead and copper release from household plumbing.

Leesburg also has one source of groundwater supply, the Paxton Well. Approximately 96% of Leesburg's drinking water is produced at the Water Filtration Plant using river water and 4% is produced by the Paxton Well using groundwater.

This report is a summary of the water quality provided to our customers in 2021 and includes information about:

Your drinking water sources and protecting water quality

Drinking water regulations

What your drinking water contains

Treatment processes and multi-barrier approaches to ensure high quality water



Your Water Sources

Under requirements of the Safe Drinking Water Act, states are responsible for conducting source water assessments that identify public drinking water supplies, inventory potential sources of contamination and assess likely threats to downstream water users. This source water assessment, completed by the Virginia Department of Health, determined that the town's river and groundwater sources were highly susceptible to contamination, based on criteria in the state's Source Water Assessment Program. The town is working, in conjunction with the EPA

and the Potomac River Basin Drinking Water Source Protection Partnership (Potomac DWSPP), to address the concerns over susceptibility to contamination. For additional information on the VDH assessment report, contact the Town of Leesburg Utilities Department at (703) 771-2750. To learn more about the Potomac DWSPP, please visit their website at www.potomacdwspp.org.

Virginia's drinking water sources include rivers, lakes, reservoirs, streams, springs, and wells. As water travels over and through the earth, it dissolves naturally occurring minerals and radioactive materials and can pick up substances resulting from the presence of animal or human activity. Contaminants that may be present in source water include:

- Biological contaminants such as viruses and bacteria
- Inorganic contaminants such as metals and salts
- Organic chemicals that are byproducts of industrial production
- Radioactive materials
- Endocrine disrupting chemicals
- Pharmaceuticals and personal care products (PPCP)

Drinking water, including bottled water, may reasonably be expected to contain small amounts of some contaminants. The presence of contaminants does not necessarily indicate the water poses a risk to health. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.



Protecting Water Quality

Source water protection is the first step in ensuring safe high quality drinking water. Human activity can have a significant impact on the quality of the water found in our streams, rivers, lakes, ponds, reservoirs, springs, and wells; it is important that everyone try to minimize activities that can degrade water quality. Here are some simple things that you can do in your yard and home:

- Use fertilizers and pesticides responsibly. Base fertilizer applications on soil tests and consider using organic products. Correctly identify pests and treat with non-chemical options where possible.
- Recycle your yard waste as compost or mulch.
- Mow grass to proper height. Three inches is recommended.
- Plant native or well adapted plants that are likely to require less water, fertilizer, and pesticides.
- Flush pet waste down the toilet or wrap securely and place in trash.
- Reduce your use of household chemicals. Carefully follow product labels for use, storage, and disposal. Look for non-toxic cleaners.
- Don't pour chemicals down the drain! Dispose of household chemicals through a hazardous waste recycling program.
- Don't flush unused pharmaceuticals! Ask your pharmacist about proper disposal or use the drop box at the Town of Leesburg Police Department located at 65 Plaza Street.



Potomac River Clean Up Day. Photo courtesy of Keep Loudoun Beautiful.

Understanding Water Quality Testing Results

In general, water quality standards are set by the U.S. Environmental Protection Agency (EPA) and enforced by the states. In Virginia, the Virginia Department of Health is the agency charged with ensuring drinking water utilities meet regulatory guidelines.

The primary drinking water standard designation is maximum contaminant level (MCL). MCL is the maximum level of a parameter that is permissible in the drinking water. The utility must sample for the parameter and verify that it is below the MCL. For some parameters, the MCL is set for the average of several individual samples analyzed over a period of time, rather than a single sample.

The EPA sets MCLs at very stringent levels. In developing the standards, EPA assumes that the average adult drinks two liters of water each day throughout a 70-year lifespan. EPA generally sets MCLs at levels that will result in no adverse health effects for some contaminants or a one-in-ten-thousand to one-in-a-million chance of having the described health effect for other contaminants.

The Virginia Department of Health (VDH) allows the town to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data provided in the Substances Detected in Your Drinking Water table on page 8, though representative, was collected prior to 2021.

About Drinking Water Constituents

Turbidity

Turbidity is measured to determine the clarity of water. Turbidity in excess of 5 NTU is noticeable to the average person. Regulations require that 95% of samples collected in a monthly reporting period must be less than or equal to 0.3 NTU.

The Town of Leesburg has adopted a more stringent goal of 0.1 NTU for finished water turbidity. In 2021 the goal was achieved.

Fluoride

Fluoride in drinking water is effective at reducing the number of dental cavities at the recommended range of 0.7 ppm to 1.2 ppm. Recent evidence suggests that the lowest end of that range may be optimal. The Town of Leesburg currently adds approximately 0.8 ppm fluoride.

Copper

Copper is an essential element, but some people who drink water containing copper in excess of the Action Level over a prolonged period could experience liver damage.



Solids Recirculation Pump

Important Information About Lead in Drinking Water

Lead is a toxic metal that accumulates in the bones of humans and animals and is linked to nervous system disorders.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. The Town of Leesburg is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When water in your home has been sitting in the pipes for several hours, you can minimize exposure to lead by flushing the faucet for a minimum of 30 seconds to two minutes until the water becomes cooler or reaches a steady temperature before using the water for drinking or cooking.



If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the EPA's Safe Drinking Water Hotline at (800) 426-4791 or at www.epa.gov/safewater/lead

Hardness

Naturally occurring minerals such as calcium and magnesium are in solution in water and are collectively known as hardness. Leesburg's water hardness fluctuates based on precipitation levels but is typically between 100 – 150 ppm. Hardness is sometimes expressed as grains-per-gallon; Leesburg water hardness is typically between 5.8 – 8.8 grains per gallon.

Nitrates

Nitrates in drinking water at levels above 10 ppm are a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. Nitrate levels in Leesburg's water system are significantly lower than the regulatory limits. However, if you are caring for an infant, you should ask for advice from your health care provider.

What your drinking water contains

Substances Detected in Your Drinking Water

SUBSTANCE (UNITS)	LEVEL DETECTED (RANGE)	SAMPLE DATE	MCL	GOAL	TYPICAL SOURCE	MEETS STANDARD
Copper ¹ (ppm)	0.2 Locations exceeding action level = 0	2019	Action Level 1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits	✓
Fluoride ² (ppm)	0.84 (<0.20 - 0.84)	2021	4	4	Water additive which promotes strong teeth; erosion of natural deposits	✓
Haloacetic Acids (HAAs) (ppb)	39 (10.7 - 46)	2021	60	n/a	Byproduct of drinking water disinfection	✓
Lead ¹ (ppb)	2 Locations exceeding action level = 0	2019	Action Level 15	zero	Corrosion of household plumbing systems; erosion of natural deposits	✓
Barium ³ (ppm)	Rollins WFP: 0.03 Paxton Well: 0.09	2021 2019	2	2	Drilling wastes and metal refinery discharge; erosion of natural deposits	✓
Chlorine MRDL (ppm)	1.45 (0.21 - 3.08)	2021	4 MRDL	4 MRDLG	Water additive used for disinfection to control microbes	✓
Nitrate/Nitrite ⁴ (ppm)	Rollins WFP: 0.68 Paxton Well: 4.1	2021 2020	10	10	Runoff from fertilizer use; septic systems; erosion of natural deposits	✓
Gross Beta ⁵ (pCi/L)	Rollins WFP: 1.5 Paxton Well: 2.5	2019 2019	50	zero	Erosion of natural deposits	✓
Gross Alpha ⁵ (pCi/L)	Rollins WFP: 0.4 Paxton Well: 0.5	2019 2019	15	zero	Erosion of natural deposits	✓
Total Organic Carbon (TOC) ⁶ (ratio)	2.16 (1.41 - 3.19)	2021	Treatment Technique	n/a	Naturally occurring organic matter	✓
Trihalomethane (THM) (ppb)	65.3 (13.6 - 99)	2021	80	n/a	Byproduct of drinking water disinfection	✓
Turbidity ⁷	0.09	2021	Treatment Technique	n/a	Soil runoff	✓
Sodium (ppm)	Rollins WFP: 19 Paxton Well: 15.6	2021 2019	n/a	n/a	Erosion of natural deposits; runoff from road deicing chemicals; industrial sources	n/a

Substances NOT Detected in Your Drinking Water

Your water was tested for several **Regulated Volatile Organic Chemicals (VOC)** and **Synthetic Organic Chemicals (SOC)** including petroleum-based products, pesticides, herbicides, and industrial chemicals. Additionally, your water was monitored for a number of **Inorganic Chemicals** and **Radiological Substances** for which the EPA has set MCLs, in addition to those outlined in the table above. None of these chemicals were detected.

Poly- and Perfluoroalkyl Substances (PFAS) are a group of over 5,000 man-made chemical compounds found in products that we use frequently in our daily lives, such as non-stick cookware, stain and water repellant products, dental floss, and cosmetics. Concern over these chemicals have increased recently as some studies have determined that exposure to elevated levels of some of these compounds can lead to adverse health outcomes. Leesburg tested for a group of these compounds in 2021, and none were found in the finished water at the analytical method detection limit. While the results from this testing are encouraging, these compounds are relatively common in the environment. It is reasonable to expect that trace levels are present from time to time.



Abbreviations + Definitions

In the Substances Detected in Your Drinking Water section of this report, terms and abbreviations are used that may be unfamiliar to you. The following list of definitions may help to explain the meanings of these terms and assist you in understanding your water quality.

Action Level (AL)	The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.
MCL	Maximum Contaminant Level is the highest level of a contaminant that is allowed in drinking water by the EPA. This is the level of contaminant the utility is required to stay below.
MCLG	Maximum Contaminant Level Goal is a level of contaminant at which there is no known or expected risk to health. This is the level the utilities target to stay below.
MRDL	Maximum Residual Disinfectant Level is the level of disinfectant in the distribution system that a utility must stay below. The concentration is calculated on a running annual average from specified points in the water distribution system.
MRDLG	Maximum Residual Disinfectant Level Goal is the level of disinfectant of which there is no known or expected risk to health. This is also calculated on a running annual average basis.
NTU	Nephelometric Turbidity Unit is a measure of water clarity.
n/a	Non applicable.
pCi/L	Picocuries per liter is a measure of radioactivity in water.
ppb	One part per billion. This corresponds to one minute in 2,000 years or one penny in \$10,000,000.
ppm	One part per million. This corresponds to one minute in two years or one penny in \$10,000.
ppb/ppm Conversion	One ppb equals 0.001 ppm.
Treatment Technique (TT)	A required process intended to reduce the level of a contaminant in drinking water. Some parameters are regulated by TT rather than MCL. If a TT level is exceeded, the utility may be required to change their treatment technology to meet the required standards.
Turbidity	A measure of the clarity of water, measured in NTUs. Turbidity has no health effects but can hinder the effectiveness of disinfection. The Town of Leesburg monitors turbidity because it is a good indicator of water quality.

All testing results are from 2021 unless otherwise noted below.

¹ **Lead and copper** are tested at customers' taps and is required every three years. Data reported are from 2019. Next testing year is 2022. None of the 60 sample locations tested in 2019 exceeded the Action Level for either lead or copper. The presence of lead or copper in water at customers' taps is typically the result of household plumbing system corrosion. Water leaving Leesburg's water filtration plant has no measurable lead or copper.

² **Fluoride** is added to the water produced by the Town of Leesburg for its positive oral health benefits.

³ **Metals testing** is conducted annually at the WFP and every three years at Paxton Well; Paxton Well Barium results are from 2019. Next testing date is 2022.

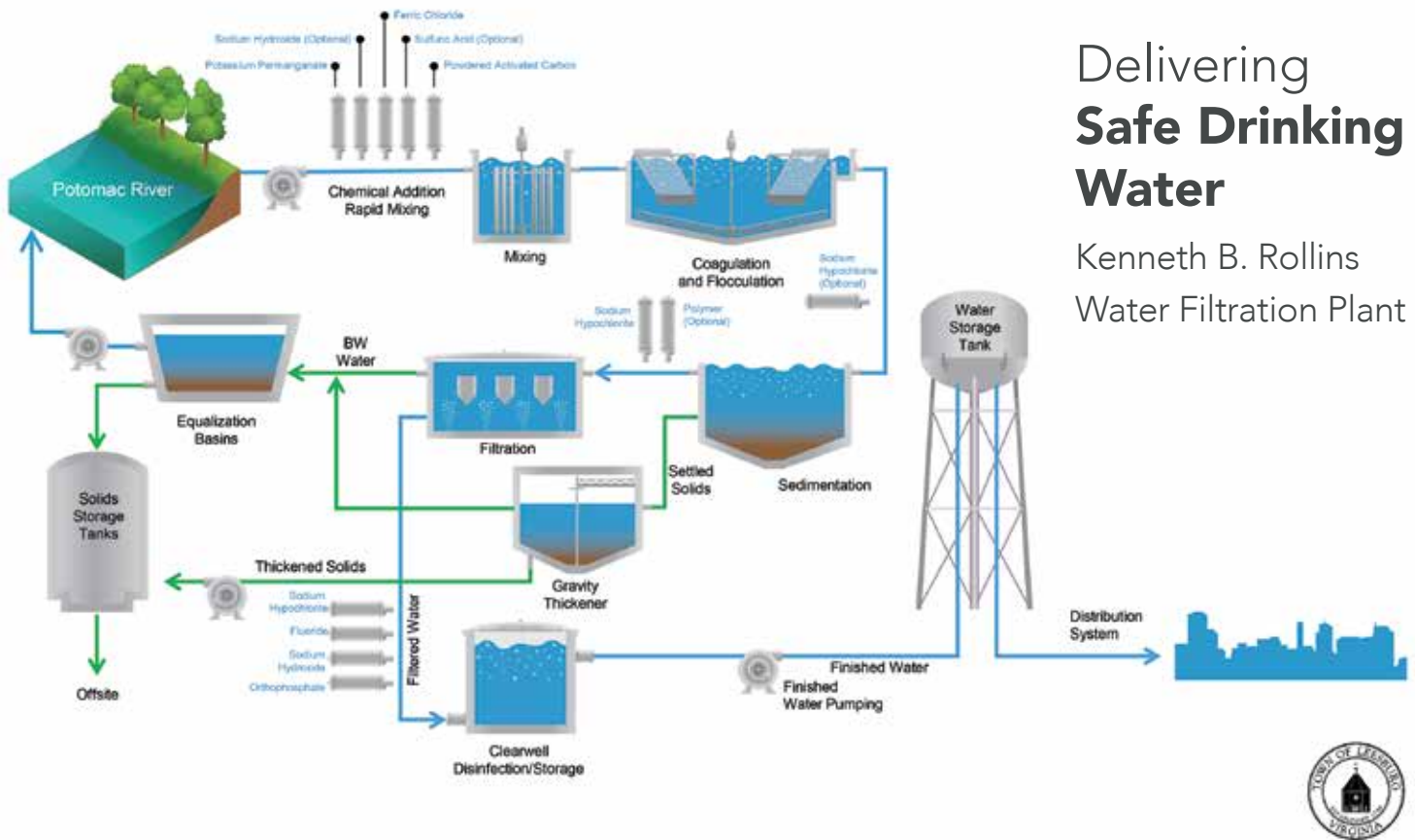
⁴ **Nitrate testing** is required once each year. Paxton Well was out of service for most of 2021 so Nitrate samples could not be collected.

⁵ **Radiological testing** is required every six years; Gross Alpha and Beta results are from 2019.

⁶ **TOC** is reported as a removal ratio on an annual average basis; the annual average removal ratio must be equal to or greater than 1.0.

⁷ **Turbidity levels** are measured during the treatment process after filtration. The turbidity level of filtered water shall be less than or equal to 0.3 NTU in at least 95% of the measurements taken each month and less than 1 NTU at all times. The lowest monthly percentage of Town of Leesburg samples meeting the turbidity limits was 100%.

Treatment processes and multi-barrier approaches to ensure high quality water



Delivering Safe Drinking Water

Kenneth B. Rollins
Water Filtration Plant

Disinfection Byproducts

Disinfection is an absolutely essential component of drinking water treatment. Disinfection prevents the occurrence and spread of many serious and potentially deadly water-borne diseases such as cholera, dysentery, and typhoid. When chlorine is used for disinfection, it can react with naturally occurring organic matter in the water that largely results from natural breakdown of vegetation, leaves, and wood. Minute amounts of disinfection byproducts can be formed as a consequence of these reactions. People who drink water that contains high levels of disinfection byproducts over a number of years may have an increased risk of health concerns such as liver, kidney, or central nervous system problems, and may have an increased risk of developing cancer. As a result, regulations limit the amount of disinfection byproducts in your water to control these risks.

Regulations require that total THMs and HAAs be reported as running annual averages to the Virginia Department of Health. Averages are calculated quarterly on samples taken at various locations throughout our distribution system. Our water meets the disinfection byproducts standards.

Two categories of disinfection byproducts are specifically limited by these regulations: trihalomethanes (THMs) and haloacetic acids (HAAs). In addition, regulations require specified levels of removal of naturally occurring organic matter using the total organic carbon (TOC) analysis as the specific measure and place limits on the allowable

levels of chlorine (MRDL) and other disinfectants that can be used in the water system. This provides a more extensive basis of control to limit the potential for exposure to other disinfection byproducts.



Microbiological

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other potentially harmful bacteria may be present. Treatment such as filtering and disinfecting the water removes or destroys the microbial contaminants. *Cryptosporidium* and *Giardia* are microscopic protozoa that, when ingested, can cause illness in humans.

Regulations require that no more than 5% of treated water samples test positive for coliform presence per month. The Town of Leesburg analyzes more than 70 samples per month at various locations throughout our distribution system. Our water meets the coliform standard.

These parasites can be found in swimming pools, contaminated foods, daycare centers, nursing homes, streams, rivers, and drinking water. In 2017, the town concluded a 24 consecutive month *Cryptosporidium* sampling program of its source water as part of the EPA's Long Term 2 Enhanced Surface Water Treatment Rule. Of the 24 samples

collected from 2015 through 2017, nine indicated the presence of *Cryptosporidium*. *Cryptosporidium* is a protozoan pathogen that is widespread in surface water and can cause gastrointestinal illness. According to EPA regulations, the levels of *Cryptosporidium* detected in Leesburg's source water constitutes a "Bin 2" classification. This classification requires that Leesburg meet certain minimum removal standards for *Cryptosporidium*.

The Town of Leesburg utilizes multiple barriers of protection at the Water Filtration Plant such as enhanced coagulation, multi-media filtration, disinfection, and additional turbidity removal techniques ensuring optimum removal of these parasites. Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons – such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, the elderly, and infants – can be particularly at risk from infections. These people should seek advice about drinking water from health care providers, the EPA, or the Centers for Disease Control. Guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and *Giardia* are available from the EPA's Safe Drinking Water Hotline at (800) 426-4791.

Radiological

Certain minerals are radioactive and may emit forms of radiation known as alpha and beta radiation. People who drink water contaminated with alpha and beta radiation at high levels over many years may have an increased risk of getting cancer.

Radiological results are expressed picocuries per liter (pCi/L). The MCL expressed as an annual limit is calculated on the basis of a two-liter per day drinking water intake. Our water meets the EPA radiological standards.



Do you have suggestions or concerns regarding your drinking water?

Public comments are welcome at Leesburg Town Council meetings (2nd & 4th Tuesdays each month at 7:00 p.m., at Leesburg Town Hall, 25 W. Market St.), or email the Council at council@leesburgva.gov.

**Use
Water
Wisely.**

Ongoing Water System Improvements

The town maintains 240 miles of water mains, 2,900 fire hydrants, and over 16,000 service connections. In 2021, the town's Utility Maintenance Division continued to replace aging distribution system pipelines as part of the Department of Utilities Capital Improvement Plan.

America's Water Infrastructure Act (AWIA) requires municipal water systems serving more than 3,300 people to complete a Risk and Resilience Assessment (RRA) and update an Emergency Response Plan (ERP). Based on the size of the population served by the Department of Utilities, the town submitted the RRA compliance certification to the US Environmental Protection Agency (USEPA) in December 2020. The town completed a comprehensive update of the ERP in 2021. The RRA and ERP will be reviewed and updated every five years.

Water System Protection

Do you have an irrigation system or are you installing one? Homeowners installing in-ground irrigation systems must obtain a plumbing permit from the Loudoun County Building and Development Department. Your drinking water must be protected by an approved backflow prevention device. This device must be tested by a certified technician and the results submitted to the town prior to the activation of the irrigation system. Thereafter, the device must be tested annually.

For additional information, please call (703) 771-2762 or visit the town's website at www.leesburgva.gov/backflow.

For more information about water quality, call the town's Water Supply Division at (703) 737-7110.

For additional copies of this report, call the Department of Utilities at (703) 771-2750. An online report is available at www.leesburgva.gov/waterqualityreport.

Para más información acerca de la calidad del agua, favor de llamar al Departamento de Agua de Town of Leesburg al teléfono (703) 737-7110. Para copia de este reporte, llame al Departamento de Utilidades de Town of Leesburg al teléfono (703) 771-2750. Puede conseguir una copia de este reporte en nuestra página web: www.leesburgva.gov/waterqualityreport.



PLEASE RECYCLE THIS REPORT WHEN FINISHED.